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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,002	09/25/2003	Haruhiro H. Goto	2420 D2 DISPLAY/AKT	7709

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EXAMINER

AHMED, SHAMIM

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,002

Applicant(s)

GOTO, HARUHIRO H.

Examiner

Shamim Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/30/05.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 11/30/05.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim 36 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that the cited reference Goodyear et al fail to teach or suggest etching the substrate in a first step by supplying a first gas at a first rate to a first portion of the substrate through a first channel and supplying the first etch gas at a second rate through a second flow channel, wherein the first rate is different than the second rate.

In response to the argument, examiner states that the argument is not persuasive because the argument is more specific than the claims, such as the claims are not limited that the first portion is different than the second portion and further more, the first step and the second step are not necessary to be different steps as claimed.

Additionally, Goodyear et al teach supplying different gas in different locations on the substrate and the primary gas can be flowing at a faster rate than a secondary gas, which are efficiently controlled by flow controllers (col.5, lines 14-36).

Examiner also states that Goodyear et al also teach variations and modifications can be done by one of a persons skilled in the art in order to perform desired plasma processing such as etching a substrate in multiple sequential steps (col.8, lines 43-51).

Remarks

2. It is noted that in the previous office action mailed on 6/1/05, examiner inadvertently named the only pending claim 36 as claim 1, which should have been marked as "claim 36".

Applicants amendment/response filed on 9/28/05 cancel the pending claim by naming "claim 1" and added new claims 2-19.

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 2-19 been renumbered as 37-54.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 37-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodyear et al (5,532,190).

Goodyear et al disclose a method of manufacturing an electronic device using a plasma treatment, wherein a device substrate is mounted on a supporting electrode (11), which is facing a perforated electrode (12), a reactive plasma (5) being generated in space between the electrodes (col.3, lines 65-col.4, line 9 and figure 1).

Goodyear et al teach that a reaction or primary gas mixture (25) flows in a direction across the substrate with a first flow channel (25a) in a first space (12a) and

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with a second flow channel (25b) in a second area (12b) in such that the second area being excluded from the first area (col.6, lines 41-50 and figure 1).

Goodyear et al also teach that each gas supply line is connected with flow controller (23a, 23b in figure 1).

Goodyear et al further teach that controlling the gas concentration via mixing flow meter (24a) in order to maintain uniform plasma treatment, wherein the reaction or primary gas mixture contain higher amount of a first reaction gas (SiH_4) than a second reaction gas (N_2) (col.5, lines 29-32).

Goodyear et al do not teach explicitly that etching a substrate in a first step by supplying first gas with different first and second flow rate and etching the substrate in a second step by supplying second gas with different flow rate such as third and fourth rate.

However, Goodyear et al also teach variations and modifications can be done by one of a persons skilled in the art in order to perform desired plasma processing such as etching a substrate in multiple sequential steps (col.8, lines 43-51).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to perform first and second etching step for etching different portions of the substrate at different rates as taught by Goodyear et al.

As to claim 52, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to supply a second gas to the first portion or at the same portion of the substrate with a second gas because Goodyear et al teach that different

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gas can be supplied in different portions of the substrate with flow controller for plasma uniformity (col.5, lines 44-52 and figure 1).

Additionally, the claim is not limited that the first and the second gas are different or the first and the second portions are in different location.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shamim Ahmed
Primary Examiner
Art Unit 1765

SA
December 4, 2005